EBIS Project
Preliminary Risk Assessment

Criteria for Risk Identification and Assessment

a) Likelihood of Occurrence

- Very likely (VL): risk is likely to occur with a probability greater than or equal to 90%
- Likely (L): risk is likely to occur with a probability greater than or equal to 50%
- Unlikely (U): There is a less than 50% chance that this event will occur

b) Consequence

Consequence will identify impact that occurrence of this event will have on cost, schedule and/or technical performance of the EBIS preinjector.
Consequence is identified as Marginal, Significant, or Critical as below.

	Marginal (M)	Significant (S)	Critical (C)
Cost Impact on project contingency is:	<$100K	$100K - $500K	>$500K
Schedule Impact on project schedule is:	None	Impacts milestone dates	Impacts project early finish date
Technical Impact on project performance is:	Minor degradation	Significant degradation	CD-4 will not be met

C) Risk Categorization Matrix

	Consequence		
Likelihood of Occurrence	**Marginal**	**Significant**	**Critical**
Very likely	Medium	High	High
Likely	Low	Medium	High
Unlikely	Low	Low	Medium

Assessment:

Risk: Fluctuation in $/Euro
Type: Cost
Likelihood: Likely
Consequence: Significant
Perceived risk: Medium
Details:
Fluctuations in the foreign exchange rate will affect the cost of foreign procurements, particularly the two anticipated large procurements, the RFQ and Linac.
Mitigation:

- Negotiate contracts in US$ if possible
- Increased contingency on the RFQ and Linac
- Planned early procurement of the RFQ

Risk: Procurement delays in major components
Type: Schedule
Likelihood: Unlikely
Consequence: Significant
Perceived risk: Low
Details:
Several large procurements are on the critical path for the project.
Mitigation:

- Vendor history on meeting scheduled deliveries will be considered when awarding contracts for large procurements
- Place Intermediate vendor milestones in the contract
- Frequent communication with the vendor throughout the procurement process
- Vendor visits at key milestones

Risk: Changes to the Booster operating schedule causing schedule delays
Type: Schedule (Cost)
Likelihood: Unlikely
Consequence: Critical
Perceived risk: Medium
Details:
Booster operation must be shutdown during the installation of a portion of the HEBT line. This work, expected to take approximately 2 months, will be scheduled to occur during one of our normal summer shutdown periods (summer of FY'08). Changes in the duration or time of the shutdown due to changes in the RHIC or NSRL operating schedule would result in a need to shift the installation time, potentially causing a schedule delay.
Mitigation:

- Careful planning of the installation and good coordination with operations
- Plan for early installation if possible
- Reduce the time required for installation by careful preparation and working two shifts if necessary.

Risk: Delays in project funding
Impact: Schedule
Likelihood: Very Likely
Consequence: Significant
Perceived risk: High
Details:
Delays in project funding due to Congressional Continuing Resolution could delay the placement of several key long-lead procurements.
Mitigation:

- Try to avoid scheduling large procurements in the first quarter of a FY
- Work closely with DOE and NASA to insure that adequate funds are available for key procurements
- Work closely with Procurement & Property Management to write purchase orders that allow the flexibility of phased-funding and/or options.

Risk: Manufacturing of electron collector
Impact: Cost
Likelihood: Unlikely
Consequence: Significant
Perceived risk: Low
Details:
The electron collector, a key component of the EBIS, must handle power levels higher than we have previously designed for. Flaws due to faulty materials and manufacturing processes may appear when the collector is later subjected to these conditions, possibly limiting EBIS to electron beam currents or repetition rates that are lower than the design performance specifications. One would then have to design and fabricate a second electron collector.
Mitigation:

- Detailed design process (done)
- Engineering design review (done)
- Quality control provisions, including test procedures, in the procurement specification.
- Frequent communication with vendor before procurement (done) and during fabrication.
- Early fabrication and testing of the collector to allow time for an appropriate response (redesign, new choice of materials, modification of collector, etc.)
  (done - collector will be procured and tested as part of the R&D program in FY'05/'06, allowing sufficient time for a redesign without impact to the overall project schedule)